

Recovery Plan Action Status

Plan Name: Final Recovery Plan for Three Plant Species on Nihoa Island

Plan Status: Final

Plan Date: 31-Mar-98

Lead Agency: USFWS

Lead Office: Pacific Islands Fish And Wildlife Office

(408)

(792-9400)

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Lo'ulu (Pritchardia remota), No common name (Amaranthus brownii), No common name (Schiedea verticillata)	1	11	Develop and maintain monitoring program	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Researchers for Nihoa Plant Species, U.S. Fish and Wildlife Service, Refuge Division	Research: Demographic Studies, Research: Habitat Status, Research: Population Surveys	Contract, Internal Field Assistance, Species Expert	
Lo'ulu (Pritchardia remota), No common name (Amaranthus brownii), No common name (Schiedea verticillata)	1	121	Continue to restrict human access	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, U.S. Fish and Wildlife Service, Refuge Division	Management: Habitat Maintenance and Manipulation	Internal Field Assistance	
Lo'ulu (Pritchardia remota), No common name (Amaranthus brownii), No common name (Schiedea verticillata)	1	122	Maintain genetic stock ex situ	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Botanical Gardens	Management: Propagation, Research: Population Surveys	Contract, Internal Field Assistance, Species Expert	Full genetic collections of the three species in this plan are not complete, largely due to the limited access to this small island. Amaranthus brownii is particularly difficult, since the annual plant grows in the winter months, when rough seas make it impossible to land on the island most of the winter.
Lo'ulu (Pritchardia remota), No common name (Amaranthus brownii), No common name (Schiedea verticillata)	1	123	Control alien plants	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, U.S. Fish and Wildlife Service, Refuge Division	Management: Habitat Maintenance and Manipulation, Management: Predator and Competitor Control	Contract, Internal Field Assistance, Volunteer	This task is limited due to the infrequent visits to the island.

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Lo'ulu (Pritchardia remota), No common name (Amaranthus brownii), No common name (Schiedea verticillata)	1	124	Control alien insects, if they pose a threat	Ongoing Current	FY 2000 - FY 2004		U.S. Fish and Wildlife Service, Ecological Services Division, U.S. Fish and Wildlife Service, Refuge Division	Management: Predator and Competitor Control	Contract, Internal Field Assistance, Species Expert	This task is limited due to the infrequent visits to the island. In the past few years, however, the NWR has put large effort into controlling an introduced grasshopper that is eating all of the vegetation on the island, including these three species.
Lo'ulu (Pritchardia remota), No common name (Amaranthus brownii), No common name (Schiedea verticillata)	1	1251	Continue regular surveys for aliens on Nihoa	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, U.S. Fish and Wildlife Service, Refuge Division	Research: Competition, Research: Predation	Contract, Internal Field Assistance, Species Expert	This task is limited due to the infrequent visits to the island and infrequent space on boats for botanists to participate.
Lo'ulu (Pritchardia remota), No common name (Amaranthus brownii), No common name (Schiedea verticillata)	1	1252	Install and maintain remote monitors	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, U.S. Fish and Wildlife Service, Refuge Division	Research: Competition, Research: Disease, Research: Population Surveys, Research: Predation	Contract, Internal Field Assistance, Species Expert	
Lo'ulu (Pritchardia remota), No common name (Amaranthus brownii), No common name (Schiedea verticillata)	1	126	Monitor for rodents and control, if necessary	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, U.S. Animal and Plant Health Inspection Service, Wildlife Services (formerly Animal Damage Control), U.S. Fish and Wildlife Service, Refuge Division	Research: Population Surveys	Contract, Graduate Student, Internal Field Assistance	To date no rodents have been observed on the island.
Lo'ulu (Pritchardia remota), No common name (Amaranthus brownii), No common name (Schiedea verticillata)	1	127	Monitor for disease and control, if necessary	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, U.S. Geological Survey, Biological Resources Division, U.S. Fish and Wildlife Service, Refuge Division	Management: Habitat Maintenance and Manipulation	Contract, Internal Field Assistance, Species Expert	To date no diseases have been identified as threats.

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Lo'ulu (Pritchardia remota), No common name (Amaranthus brownii), No common name (Schiedea verticillata)	1	128	Ensure availability of pollination vectors	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, U.S. Geological Survey, Biological Resources Division, U.S. Fish and Wildlife Service, Refuge Division	Management: Other	Contract, Graduate Student, Internal Field Assistance, Species Expert	For these species, the pollinator still needs to be determined.
Lo'ulu (Pritchardia remota), No common name (Amaranthus brownii), No common name (Schiedea verticillata)	1	129	Control other threats, as necessary	Not Started			U.S. Fish and Wildlife Service, Refuge Division	Management: Habitat Maintenance and Manipulation, Management: Predator and Competitor Control	Contract, Internal Field Assistance, Species Expert	This task has not been started because no other threats have been identified.
Lo'ulu (Pritchardia remota), No common name (Amaranthus brownii), No common name (Schiedea verticillata)	2	21	Collect diagnostic data on crucial ecosystem components and map alien vegetation	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Researchers for Nihoa Plant Species, U.S. Geological Survey, Biological Resources Division	Research: Habitat Requirements	Contract, Graduate Student, Internal Field Assistance, Species Expert	Critical habitat, and the suitable habitat from which critical habitat was derived, has been identified for all species in this recovery plan. Additional studies are needed to develop more precise microclimate needs for each species.
Lo'ulu (Pritchardia remota), No common name (Amaranthus brownii), No common name (Schiedea verticillata)	2	22	Study various aspects of growth	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Researchers for Nihoa Plant Species, U.S. Geological Survey, Biological Resources Division	Research: Demographic Studies, Research: Genetics	Contract, Graduate Student, Internal Technical Assistance, Species Expert	The current knowledge has been gathered mainly from incidental observations during propagation, field surveys, and monitoring. More detailed experimental research is needed to fully understand this aspect of the species.

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Lo'ulu (Pritchardia remota), No common name (Amaranthus brownii), No common name (Schiedea verticillata)	2	23	Study reproductive viability	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Researchers for Nihoa Plant Species, U.S. Geological Survey, Biological Resources Division	Research: Demographic Studies, Research: Genetics	Contract, Graduate Student, Internal Field Assistance, Species Expert	The current knowledge has been gathered mainly from incidental observations during propagation, field surveys, and monitoring. More detailed experimental research is needed to fully understand this aspect of the species.
Lo'ulu (Pritchardia remota), No common name (Amaranthus brownii), No common name (Schiedea verticillata)	2	24	Determine parameters of viable populations	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, Researchers for Nihoa Plant Species, U.S. Geological Survey, Biological Resources Division	Other: Regulations, Research: Competition, Research: Demographic Studies, Research: Genetics, Research: Habitat Requirements, Research: Habitat Status, Research: Population Surveys, Research: Predation	Contract, Graduate Student, Internal Field Assistance, Internal Technical Assistance, Species Expert	
Lo'ulu (Pritchardia remota), No common name (Amaranthus brownii), No common name (Schiedea verticillata)	2	25	Determine kind and degree of threat posed by selected introduced organisms and diseases	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Researchers for Nihoa Plant Species, U.S. Geological Survey, Biological Resources Division, U.S. Fish and Wildlife Service, Refuge Division	Research: Competition, Research: Disease, Research: Management Techniques, Research: Predation	Contract, Graduate Student, Internal Field Assistance, Internal Technical Assistance, Species Expert	The current knowledge has been gathered mainly from incidental observations during propagation, field surveys, and monitoring. More detailed experimental research is needed to fully understand this aspect of the species.
Lo'ulu (Pritchardia remota), No common name (Amaranthus brownii), No common name (Schiedea verticillata)	2	26	Determine control methods to combat threats	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Researchers for Nihoa Plant Species, U.S. Geological Survey, Biological Resources Division, U.S. Fish and Wildlife Service, Refuge Division	Research: Management Techniques	Contract, Graduate Student, Internal Technical Assistance, Species Expert	This task is limited due to the infrequent visits to the island.

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Lo'ulu (Pritchardia remota), No common name (Amaranthus brownii), No common name (Schiedea verticillata)	2	27	Develop seed storage, propagation, and outplanting	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Botanical Gardens, Researchers for Nihoa Plant Species	Management: Propagation, Management: Reintroduction	Contract, Graduate Student, Internal Field Assistance, Species Expert	This task is limited due to the infrequent visits to the island, and therefore the ex situ material available for reintroduction is limited.
Lo'ulu (Pritchardia remota), No common name (Amaranthus brownii), No common name (Schiedea verticillata)	2	29	Evaluate results and use in future management	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, U.S. Fish and Wildlife Service, Refuge Division	Research: Competition, Research: Genetics, Research: Habitat Requirements, Research: Management Techniques, Research: Population Surveys, Research: Predation, Research: Propagation, Research: Taxonomic Studies	Contract, Graduate Student, Internal Technical Assistance, Species Expert	
No common name (Amaranthus brownii)	2	31	Augment existing colonies of Amaranthus brownii	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, U.S. Fish and Wildlife Service, Refuge Division	Management: Propagation, Management: Reintroduction	Contract, Internal Field Assistance, Internal Technical Assistance, Species Expert	This task is discontinued, because no genetic collections of this species have been done, largely due to the limited access to this small island. The annual plant grows in the winter months, and rough seas make it impossible to land on the island most of the winter.
No common name (Amaranthus brownii)	2	32	Reestablish Amaranthus brownii colonies within historic locations on Nihoa	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, U.S. Fish and Wildlife Service, Refuge Division	Management: Reintroduction	Contract, Internal Field Assistance, Internal Technical Assistance, Species Expert	This task has been discontinued until genetic collections of this species have been done, largely due to the limited access to this small island. The annual plant grows in the winter months, and rough seas make it impossible to land on the island most of the winter.

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Lo'ulu (Pritchardia remota), No common name (Amaranthus brownii), No common name (Schiedea verticillata)	2	51	Investigate feasibility and desirability of introduction of three species	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, Researchers for Nihoa Plant Species, U.S. Geological Survey, Biological Resources Division, U.S. Fish and Wildlife Service, Refuge Division	Management: Planning, Management: Reintroduction	Contract, Graduate Student, Internal Technical Assistance, Species Expert	This task is limited based on material available in ex situ collections.
Lo'ulu (Pritchardia remota), No common name (Amaranthus brownii), No common name (Schiedea verticillata)	2	52	Identify specific introduction sites on other Hawaiian islands	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Refuge Division	Management: Planning, Management: Reintroduction	Contract, Graduate Student, Internal Technical Assistance, Species Expert	This task is limited based on material available in ex situ collections.
Lo'ulu (Pritchardia remota), No common name (Amaranthus brownii), No common name (Schiedea verticillata)	2	53	Protect and prepare establishment sites and plant	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Fish and Wildlife Service, Refuge Division	Management: Habitat Maintenance and Manipulation, Management: Predator and Competitor Control, Management: Reintroduction	Contract, Internal Field Assistance, Volunteer	This task is limited based on material available in ex situ collections.
Lo'ulu (Pritchardia remota), No common name (Amaranthus brownii), No common name (Schiedea verticillata)	2	54	Monitor and maintain new populations	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Refuge Division	Research: Demographic Studies, Research: Population Surveys	Contract, Graduate Student, Internal Field Assistance, Internal Technical Assistance, Species Expert	This task is limited based on material available in ex situ collections.

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Lo'ulu (Pritchardia remota), No common name (Amaranthus brownii), No common name (Schiedea verticillata)	3	61	Determine number of populations needed for long term survival	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, Researchers for Nihoa Plant Species, U.S. Geological Survey, Biological Resources Division	Other: Regulations, Research: Competition, Research: Demographic Studies, Research: Genetics, Research: Habitat Requirements, Research: Habitat Status, Research: Management Techniques, Research: Population Surveys, Research: Predation	Contract, Graduate Student, Internal Field Assistance, Internal Technical Assistance, Species Expert	
Lo'ulu (Pritchardia remota), No common name (Amaranthus brownii), No common name (Schiedea verticillata)	3	62	Determine number of individuals needed for long-term survival	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, Researchers for Nihoa Plant Species, U.S. Geological Survey, Biological Resources Division	Other: Regulations, Research: Competition, Research: Demographic Studies, Research: Genetics, Research: Habitat Requirements, Research: Habitat Status, Research: Management Techniques, Research: Population Surveys, Research: Predation	Contract, Graduate Student, Internal Field Assistance, Internal Technical Assistance, Species Expert	
Lo'ulu (Pritchardia remota), No common name (Amaranthus brownii), No common name (Schiedea verticillata)	3	63	Refine/revise downlisting and delisting criteria	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division	Other: Regulations, Research: Competition, Research: Demographic Studies, Research: Genetics, Research: Habitat Requirements, Research: Habitat Status, Research: Management Techniques, Research: Population Surveys, Research: Predation	Contract, Graduate Student, Internal Field Assistance, Internal Technical Assistance, Species Expert	